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<151> 2003-02-11

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taaaaagcgg ggtcccccag gcagcaaaga ctgggggaca gcactgaaag ggtgtgatga   1620

ctacttgttt atagagttct tgaaaaggtg tcttcactgg gacccctctg cccgcttgac   1680

cccagctcaa gcattaagac acccttggat tagcaagtct gtccccagac ctctcaccac   1740

catagacaag gtgtcaggga acgggtagt taatcctgca agtgctttcc agggattggg   1800

ttctaagctg cctccagttg ttggaatagc caataagctt aaagctaact taatgtcaga   1860

aaccaatggt agtatacccc tatgcagtgt attgccaaaa ctgattagct agtggacaga   1920
```

8

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gatatgccca gagatgcata tgtgtatatt tttatgatct tacaaacctg caaatggaaa       1980

aaatgcaagc ccattggtgg atgttttgt tagagtagac ttttttaaa caagacaaaa        2040

cattttata tgattataaa a                                                 2061
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<210>   6
<211>   2258
<212>   DNA
<213>   Homo sapiens

<400>   6
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aggagatggg aggcacagct cgtgggcctg ggcggaagga tgcggggccg cctggggccg        180

ggctcccgcc ccagcagcgg agtggtggag ccacagtgtt aaagaacaga gaagtgatcc        240

ttaatcattt agaattttgc ctccaccatc caccagaaaa tgaagtggaa agagaagttg        300

ggggatggtg tctatgacac cttcatgatg atagatgaaa ccaaatgtcc ccctgttca         360

aatgtactct gcaatccttc tgaaccacct ccacccagaa gactaaatat gaccactgag        420

cagtttacag gagatcatac tcagcacttt ttggatggag gtgagatgaa ggtagaacag        480

ctgtttcaag aatttggcaa cagaaaatcc aatactattc agtcagatgg catcagtgac        540

tctgaaaaat gctctcctac tgtttctcag ggtaaaagtt cagattgctt gaatacagta        600

aaatccaaca gttcatccaa ggcacccaaa gtggtgcctc tgactccaga acaagccctg        660

aagcaatata aacaccacct cactgcctat gagaaactgg aaataattaa ttatccagaa        720

atttactttg taggtccaaa tgccaagaaa agacatggag ttattggtgg tcccaataat        780

ggagggtatg atgatgcaga tggggcctat attcatgtac ctcgagacca tctagcttat        840

cgatatgagg tgctgaaaat tattggcaag gggagttttg ggcaggtggc caggtctat         900

gatcacaaac ttcgacagta cgtggcccta aaaatggtgc gcaatgagaa gcgctttcat        960

cgtcaagcag ctgaggagat ccggattttg gagcatctta agaaacagga taaaactggt       1020

agtatgaacg ttatccacat gctggaaagt ttcacattcc ggaaccatgt ttgcatggcc       1080

tttgaattgc tgagcataga cctttatgag ctgattaaaa aaataagtt tcagggtttt        1140

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aaaaataaga ttattcactg cgatctgaag ccagaaaaca ttctcctgaa acaccacggg       1260

cgcagttcaa ccaaggtcat tgactttggg tccagctgtt cgagtacca gaagctctac        1320

acatatatcc agtctcggtt ctacagagct ccagaaatca tcttaggaag ccgctacagc       1380

acaccaattg acatatggag ttttggctgc atccttgcag aactttaac aggacagcct        1440

ctcttccctg gagaggatga aggagaccag ttggcctgca tgatggagct tctagggatg       1500
```
```
                                  9
```

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ccaccaccaa aacttctgga gcaatccaaa cgtgccaagt actttattaa ttccaagggc      1560

atacccgct actgctctgt gactacccag gcagatggga gggttgtgct tgtggggggt      1620

cgctcacgta ggggtaaaaa gcggggtccc ccaggcagca aagactgggg gacagcactg      1680

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ttccagggat tgggttctaa gctgcctcca gttgttggaa tagccaataa gcttaaagct      1920

aacttaatgt cagaaaccaa tggtagtata cccctatgca gtgtattgcc aaaactgatt      1980

agctagtgga cagagatatg cccagagatg catatgtgta tatttttatg atcttacaaa      2040

cctgcaaatg gaaaaaatgc aagcccattg gtggatgttt ttgttagagt agactttttt      2100

taaacaagac aaaacatttt tatatgatta taaaagaatt cttcaagggc taattaccta      2160

accagcttgt attggccatc tggaatatgc attaaatgac tttttatagg tcaatgcaaa      2220

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaa                              2258
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<210> 7
<211> 1836
<212> DNA
<213> Homo sapiens

<400> 7
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accatccacc agaaaatgaa gtggaaagag aagttggggg atggtgtcta tgacaccttc      180

atgatgatag atgaaaccaa atgtcccccc tgttcaaatg tactctgcaa tccttctgaa      240

ccacctccac ccagaagact aaatatgctg agagatgtta catgtcttgc tcaaggtaac      300

ccagttggag gacagtcttg gcttcagctc atttgtctct agatcctgtc atcttacaac      360

tgtgccttgc tgcctctgaa aaggcagaag gaagttattc tctttctagc tttgtggaga      420

aaagcaggtg atacctcaac accaagccat agggagcttc cagtgactct gcaaagaaaa      480

aaaagaccaa ctcagactcc agagcagccc caccagagcc tgagcagttg gagccttcca      540

ccttcccacc cctgcgttcc tcttgtcctt gggcatctcc tgtgtgtgct tcggggaggt      600

gatagcagtg ctatagaagt agtggagtga agatgttttc ctatccccgt ggccttagat      660

agtgtctttg tctttgaaga gtcagggggca tctggggagc tgtctaaccg tatctatcct      720

gtagactcgg gaggaagctg ctggctgctg tagacagaag agaatccctg tgcttcgggc      780

tcctaggaag gtgtctgcca tcctctctgt gccactgtta tctgtcttct tccccatcag      840
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                                   10

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gccctacctg ccccaggaaa ggacagtgtt gggagggtaa ctcccacccc tcactcctcc   1020
ccctcattcc tgcctccaca agcatcttct gggaaaggtg aatgagggaa gagacatttg   1080
cacttgtccc ttacctacct aagttctatc cccagtggcc acttctgggg gtgttgtctt   1140
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gccccaatct caacccatcc tcttcccacc ctgtatcctt tttagtttat ttacaggaaa   1680
acatgttcaa aggtataatt actaaagtgc tcctggttac acaataatac gtctttactg   1740
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aaaaaaaaaa aaaaaaaaaa aaagaaaaaa aaaaaa                             1836
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<210> 8
<211> 1844
<212> DNA
<213> Homo sapiens

<400> 8
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gtcatccctg ctgtatcagg agaatcaagc tcacaatcag atgccggcct cagagctcaa    180
ggcttcagaa ataccttcc accctagcat taaaacccag gatcccaagg cagaggagaa     240
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tcttgaagcc aagaagctcg acacggctcc tgagaaattt agcaagacga gttttgatga    420
tgagcatggc ttctatctga aggtcctgca tgatcacatt gcctaccgct atgaagttct    480
ggagacaatc gggaaggggt cctttggaca ggtggccaag tgcttggatc acaaaaacaa    540
tgagctggtg ccctgaaaa tcatcaggaa caagaagagg tttcaccagc aggccctgat    600
ggagctgaag atcctggaag ctctcagaaa gaaggacaaa gacaacacct acaatgtggt    660
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11

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gcatatgaag gactttttct actttcgcaa tcacttctgc atcacctttg agctcctggg      720

aatcaacttg tatgagttga tgaagaataa caactttcaa ggcttcagtc tgtccatagt      780

tcggcgcttc actctctctg ttttgaagtg cttgcagatg ctttcggtag agaaaatcat      840

tcactgtgat ctcaagcccg aaaatatagt gctataccaa aagggccaag cctctgttaa      900

agtcattgac tttggatcaa gctgttatga acaccagaaa gtatacacgt acatccaaag      960

ccggttctac cgatccccag aagtgatcct gggccacccc tacgacgtgg ccattgacat     1020

gtggagcctg ggctgcatca cggcggagtt gtacacgggc taccccctgt tccccgggga     1080

gaatgaggtg gagcagctgg cctgcatcat ggaggtgctg ggtctgccgc agccggctt      1140

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aaccaacaac aggggggaaaa aaagataccc agattccaag gacctcacga tggtgctgaa     1260

aacctatgac accagcttcc tggactttct cagaaggtgt ttggtatggg aaccttctct     1320

tcgcatgacc ccggaccagg ccctcaagca tgcttggatt catcagtctc ggaacctcaa     1380

gccacagccc aggcccctca ccctgaggaa atccaattcc tttttcccct ctgagacaag     1440

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gactacagag aaaacaaaag atagccccac gaagcatgtt cagcattcag gtgatcagca     1560

ggactgtctc cagcacggag ctgacactgt tcagctgcct caactggtag acgctcccaa     1620

gaagtcagag gcagctgtcg gggcggaggt gtccatgacc tccccaggac agagcaaaaa     1680

cttctccctc aagaacacaa acgttttacc ccctattgta tgacctttgc tgagggtatg     1740

tcctgctcct ttccaccagt gatttgtatt aagacagcac ttatattgta caatacttca     1800

gactgttttt tttaaataca taaaacttta tgttaaaaaa ctct                      1844
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<210>   9
<211>   850
<212>   DNA
<213>   Homo sapiens

<400>   9
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gctgggtctg ccgccagccg gcttcattca gacagcctcc aggagacaga cattctttga      180

ttccaaaggt tttcctaaaa atataaccaa caacaggggg aaaaaaagat acccagattc      240

caaggacctc acgatggtgc tgaaaaccta tgacaccagc ttcctggact ttctcagaag      300

gtgtttggta tgggaacctt ctcttcgcat gaccccggac caggccctca agcatgcttg      360

gattcatcag tctcggaacc tcaagccaca gcccaggccc cagaccctga ggaaatccaa      420
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tcaactggta gacgctccca agaagtcaga ggcagctgtc ggggcggagg tgtccatgac      660

ctccccagga cagagcaaaa acttctccct caagaacaca aacgttttac cccctattgt      720

atgacctttg ctgagggtat gtcctgctcc tttccaccag tgatttgtat taagacagca      780

cttatattgt acaatacttc agactgtttt ttttaaatac ataaaacttt atgttaaaaa      840

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<210>   10
<211>   1860
<212>   DNA
<213>   Homo sapiens

<400>   10
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caccaagggg aagaagaata cggtaagctt cccacacatt agcaagaaag tcctgctgaa     120

gtcatccctg ctgtatcagg agaatcaagc tcacaatcag atgccggcct cagagctcaa     180

ggcttcagaa ataccttttcc accctagcat taaaacccag gatcccaagg cagaggagaa     240

gtcaccaaag aagcaaaagg tgactctgac agcggcagag gccctaaagc ttttttaagaa     300

ccagctgtct ccatatgaac aaagtgaaat cctgggctac gcggagctgt ggttcctggg     360

tcttgaagcc aagaagctcg cacggctcc tgagaaattt agcaagacga gttttgatga     420

tgagcatggc ttctatctga aggttctgca tgatcacatt gcctaccgct atgaagttct     480

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ccggttctac cgatccccag aagtgatcct gggccacccc tacgacgtgg ccattgacat    1020

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gaatgaggtg gagcagctgg cctgcatcat ggaggtgctg ggtctgccgc cagccggctt    1140

cattcagaca gcctccagga gacagacatt ctttgattcc aaaggttttc ctaaaaatat    1200
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13
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aaccaacaac aggggggaaaa aaagataccc agattccaag gacctcacga tggtgctgaa    1260

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```

<210> 11
<211> 1746
<212> DNA
<213> Homo sapiens

<400> 11
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acccaggatc ccaaggcaga ggagaagtca ccaaagaagc aaaaggtgac tctgacagcg    180

gcagaggccc taaagctttt taagaaccag ctgtctccat atgaacaaag tgaaatcctg    240

ggctacgcgg agctgtggtt cctgggtctt gaagccaaga agctcgacac ggctcctgag    300

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tttcaaggct tcagtctgtc catagttcgg cgcttcactc tctctgtttt gaagtgcttg    720

cagatgcttt cggtagagaa aatcattcac tgtgatctca gcccgaaaa tatagtgcta    780

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14

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<213>   Homo sapiens

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ggcttcagaa atacctttcc accctagcat taaaacccag gatcccaagg cagaggagaa   240

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ccagctgtct ccatatgaac aaagtgaaat cctgggctac gcggagctgt ggttcctggg   360

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15

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tcgcatgacc ccggaccagg ccctcaagca tgcttggatt catcagtctc ggaacctcaa   1380

gccacagccc aggccccaga ccctgaggaa atccaattcc tttttccccct ctgagacaag   1440

gaaggacaag gttcaaggct gtcatcactc gagcagaaaa gcagatgaga tcaccaaaga   1500

gactacagag aaaacaaaag atagccccac gaagcatgtt cagcattcag gtgatcagca   1560

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<210> 13
<211> 528
<212> PRT
<213> Homo sapiens

<400> 13

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Met Asn Asp His Leu His Val Gly Ser His Ala His Gly Gln Ile Gln
1               5                   10                  15


Val Gln Gln Leu Phe Glu Asp Asn Ser Asn Lys Arg Thr Val Leu Thr
                20                  25                  30


Thr Gln Pro Asn Gly Leu Thr Thr Val Gly Lys Thr Gly Leu Pro Val
            35                  40                  45


Val Pro Glu Arg Gln Leu Asp Ser Ile His Arg Arg Gln Gly Ser Ser
        50                  55                  60


Thr Ser Leu Lys Ser Met Glu Gly Met Gly Lys Val Lys Ala Thr Pro
65                  70                  75                  80
```

16

Met Thr Pro Glu Gln Ala Met Lys Gln Tyr Met Gln Lys Leu Thr Ala
                85   90   95

Phe Glu His His Glu Ile Phe Ser Tyr Pro Glu Ile Tyr Phe Leu Gly
            100   105   110

Leu Asn Ala Lys Lys Arg Gln Gly Met Thr Gly Gly Pro Asn Asn Gly
        115   120   125

Gly Tyr Asp Asp Asp Gln Gly Ser Tyr Val Gln Val Pro His Asp His
    130   135   140

Val Ala Tyr Arg Tyr Glu Val Leu Lys Val Ile Gly Lys Gly Ser Phe
145   150   155   160

Gly Gln Val Val Lys Ala Tyr Asp His Lys Val His Gln His Val Ala
                165   170   175

Leu Lys Met Val Arg Asn Glu Lys Arg Phe His Arg Gln Ala Ala Glu
            180   185   190

Glu Ile Arg Ile Leu Glu His Leu Arg Lys Gln Asp Lys Asp Asn Thr
        195   200   205

Met Asn Val Ile His Met Leu Glu Asn Phe Thr Phe Arg Asn His Ile
210   215   220

Cys Met Thr Phe Glu Leu Leu Ser Met Asn Leu Tyr Glu Leu Ile Lys
225   230   235   240

Lys Asn Lys Phe Gln Gly Phe Ser Leu Pro Leu Val Arg Lys Phe Ala
            245   250   255

His Ser Ile Leu Gln Cys Leu Asp Ala Leu His Lys Asn Arg Ile Ile
        260   265   270

His Cys Asp Leu Lys Pro Glu Asn Ile Leu Leu Lys Gln Gln Gly Arg
        275   280   285

Ser Gly Ile Lys Val Ile Asp Phe Gly Ser Ser Cys Tyr Glu His Gln
    290   295   300

Arg Val Tyr Thr Tyr Ile Gln Ser Arg Phe Tyr Arg Ala Pro Glu Val
305   310   315   320

Ile Leu Gly Ala Arg Tyr Gly Met Pro Ile Asp Met Trp Ser Leu Gly

17

                    325   330   335

        Cys Ile Leu Ala Glu Leu Leu Thr Gly Tyr Pro Leu Leu Pro Gly Glu
                        340   345   350

        Asp Glu Gly Asp Gln Leu Ala Cys Met Ile Glu Leu Leu Gly Met Pro
                        355   360   365

        Ser Gln Lys Leu Leu Asp Ala Ser Lys Arg Ala Lys Asn Phe Val Ser
                        370   375   380

        Ser Lys Gly Tyr Pro Arg Tyr Cys Thr Val Thr Thr Leu Ser Asp Gly
        385   390   395   400

        Ser Val Val Leu Asn Gly Gly Arg Ser Arg Arg Gly Lys Leu Arg Gly
                        405   410   415

        Pro Pro Glu Ser Arg Glu Trp Gly Asn Ala Leu Lys Gly Cys Asp Asp
                        420   425   430

        Pro Leu Phe Leu Asp Phe Leu Lys Gln Cys Leu Glu Trp Asp Pro Ala
                        435   440   445

        Val Arg Met Thr Pro Gly Gln Ala Leu Arg His Pro Trp Leu Arg Arg
                450   455   460

        Arg Leu Pro Lys Pro Pro Thr Gly Glu Lys Thr Ser Val Lys Arg Ile
        465   470   475   480

        Thr Glu Ser Thr Gly Ala Ile Thr Ser Ile Ser Lys Leu Pro Pro Pro
                        485   490   495

        Ser Ser Ser Ala Ser Lys Leu Arg Thr Asn Leu Ala Gln Met Thr Asp
                        500   505   510

        Ala Asn Gly Asn Ile Gln Gln Arg Thr Val Leu Pro Lys Leu Val Ser
                        515   520   525

<210>   14
<211>   601
<212>   PRT
<213>   Homo sapiens

<400>   14

Met Leu Thr Arg Lys Pro Ser Ala Ala Pro Ala Ala Tyr Pro Thr
1   5   10   15

```
Gly Arg Gly Gly Asp Ser Ala Val Arg Gln Leu Gln Ala Ser Pro Gly
            20                  25                  30

Leu Gly Ala Gly Pro Thr Arg Ser Gly Val Gly Thr Gly Pro Pro Ser
        35                  40                  45

Pro Ile Ala Leu Pro Pro Leu Arg Ala Ser Asn Ala Ala Ala Ala Ala
    50                  55                  60

His Thr Ile Gly Gly Ser Lys His Thr Met Asn Asp His Leu His Val
65                  70                  75                  80

Gly Ser His Ala His Gly Gln Ile Gln Val Gln Gln Leu Phe Glu Asp
                85                  90                  95

Asn Ser Asn Lys Arg Thr Val Leu Thr Thr Gln Pro Asn Gly Leu Thr
            100                 105                 110

Thr Val Gly Lys Thr Gly Leu Pro Val Val Pro Glu Arg Gln Leu Asp
        115                 120                 125

Ser Ile His Arg Arg Gln Gly Ser Ser Thr Ser Leu Lys Ser Met Glu
    130                 135                 140

Gly Met Gly Lys Val Lys Ala Thr Pro Met Thr Pro Glu Gln Ala Met
145                 150                 155                 160

Lys Gln Tyr Met Gln Lys Leu Thr Ala Phe Glu His His Glu Ile Phe
                165                 170                 175

Ser Tyr Pro Glu Ile Tyr Phe Leu Gly Leu Asn Ala Lys Lys Arg Gln
            180                 185                 190

Gly Met Thr Gly Gly Pro Asn Asn Gly Gly Tyr Asp Asp Asp Gln Gly
            195                 200                 205

Ser Tyr Val Gln Val Pro His Asp His Val Ala Tyr Arg Tyr Glu Val
    210                 215                 220

Leu Lys Val Ile Gly Lys Gly Ser Phe Gly Gln Val Val Lys Ala Tyr
225                 230                 235                 240

Asp His Lys Val His Gln His Val Ala Leu Lys Met Val Arg Asn Glu
            245                 250                 255

Lys Arg Phe His Arg Gln Ala Ala Glu Glu Ile Arg Ile Leu Glu His
        260                 265                 270
```

19

Leu Arg Lys Gln Asp Lys Asp Asn Thr Met Asn Val Ile His Met Leu
        275   280   285

Glu Asn Phe Thr Phe Arg Asn His Ile Cys Met Thr Phe Glu Leu Leu
    290   295   300

Ser Met Asn Leu Tyr Glu Leu Ile Lys Lys Asn Lys Phe Gln Gly Phe
305   310   315   320

Ser Leu Pro Leu Val Arg Lys Phe Ala His Ser Ile Leu Gln Cys Leu
            325   330   335

Asp Ala Leu His Lys Asn Arg Ile Ile His Cys Asp Leu Lys Pro Glu
            340   345   350

Asn Ile Leu Leu Lys Gln Gln Gly Arg Ser Gly Ile Lys Val Ile Asp
        355   360   365

Phe Gly Ser Ser Cys Tyr Glu His Gln Arg Val Tyr Thr Tyr Ile Gln
    370   375   380

Ser Arg Phe Tyr Arg Ala Pro Glu Val Ile Leu Gly Ala Arg Tyr Gly
385   390   395   400

Met Pro Ile Asp Met Trp Ser Leu Gly Cys Ile Leu Ala Glu Leu Leu
            405   410   415

Thr Gly Tyr Pro Leu Leu Pro Gly Glu Asp Glu Gly Asp Gln Leu Ala
            420   425   430

Cys Met Ile Glu Leu Leu Gly Met Pro Ser Gln Lys Leu Leu Asp Ala
        435   440   445

Ser Lys Arg Ala Lys Asn Phe Val Ser Ser Lys Gly Tyr Pro Arg Tyr
    450   455   460

Cys Thr Val Thr Thr Leu Ser Asp Gly Ser Val Val Leu Asn Gly Gly
465   470   475   480

Arg Ser Arg Arg Gly Lys Leu Arg Gly Pro Pro Glu Ser Arg Glu Trp
            485   490   495

Gly Asn Ala Leu Lys Gly Cys Asp Asp Pro Leu Phe Leu Asp Phe Leu
        500   505   510

```
Lys Gln Cys Leu Glu Trp Asp Pro Ala Val Arg Met Thr Pro Gly Gln
        515             520             525
```

```
Ala Leu Arg His Pro Trp Leu Arg Arg Arg Leu Pro Lys Pro Pro Thr
    530             535             540
```

```
Gly Glu Lys Thr Ser Val Lys Arg Ile Thr Glu Ser Thr Gly Ala Ile
545             550             555             560
```

```
Thr Ser Ile Ser Lys Leu Pro Pro Pro Ser Ser Ser Ala Ser Lys Leu
            565             570             575
```

```
Arg Thr Asn Leu Ala Gln Met Thr Asp Ala Asn Gly Asn Ile Gln Gln
        580             585             590
```

```
Arg Thr Val Leu Pro Lys Leu Val Ser
        595             600
```

```
<210>  15
<211>  553
<212>  PRT
<213>  Homo sapiens
```

```
<400>  15
```

```
Met Met Ile Asp Glu Thr Lys Cys Pro Pro Cys Ser Asn Val Leu Cys
1               5               10              15
```

```
Asn Pro Ser Glu Pro Pro Pro Arg Arg Leu Asn Met Thr Ala Glu
                20              25              30
```

```
Gln Phe Thr Gly Asp His Thr Gln His Phe Leu Asp Gly Gly Glu Met
        35              40              45
```

```
Lys Val Glu Gln Leu Phe Gln Phe Gly Asn Arg Lys Ser Asn Thr
    50              55              60
```

```
Ile Gln Ser Asp Gly Ile Ser Asp Ser Glu Lys Cys Ser Pro Thr Val
65              70              75              80
```

```
Ser Gln Gly Lys Ser Ser Asp Cys Leu Asn Thr Val Lys Ser Asn Ser
                85              90              95
```

```
Ser Ser Lys Ala Pro Lys Val Val Pro Leu Thr Pro Glu Gln Ala Leu
            100             105             110
```

```
Lys Gln Tyr Lys His His Leu Thr Ala Tyr Glu Lys Leu Glu Ile Ile
        115             120             125
```

Asn Tyr Pro Glu Ile Tyr Phe Val Gly Pro Asn Ala Lys Lys Arg His
130   135   140

Gly Val Ile Gly Gly Pro Asn Asn Gly Gly Tyr Asp Asp Ala Asp Gly
145   150   155   160

Ala Tyr Ile His Val Pro Arg Asp His Leu Ala Tyr Arg Tyr Glu Val
              165   170   175

Leu Lys Ile Ile Gly Lys Gly Ser Phe Gly Gln Val Ala Arg Val Tyr
              180   185   190

Asp His Lys Leu Arg Gln Tyr Val Ala Leu Lys Met Val Arg Asn Glu
              195   200   205

Lys Arg Phe His Arg Gln Ala Ala Glu Glu Ile Arg Ile Leu Glu His
        210   215   220

Leu Lys Lys Gln Asp Lys Thr Gly Ser Met Asn Val Ile His Met Leu
225   230   235   240

Glu Ser Phe Thr Phe Arg Asn His Val Cys Met Ala Phe Glu Leu Leu
              245   250   255

Ser Ile Asp Leu Tyr Glu Leu Ile Lys Lys Asn Lys Phe Gln Gly Phe
              260   265   270

Ser Val Gln Leu Val Arg Lys Phe Ala Gln Ser Ile Leu Gln Ser Leu
              275   280   285

Asp Ala Leu His Lys Asn Lys Ile Ile His Cys Asp Leu Lys Pro Glu
        290   295   300

Asn Ile Leu Leu Lys His His Gly Arg Ser Ser Thr Lys Val Ile Asp
305   310   315   320

Phe Gly Ser Ser Cys Phe Glu Tyr Gln Lys Leu Tyr Thr Tyr Ile Gln
              325   330   335

Ser Arg Phe Tyr Arg Ala Pro Glu Ile Ile Leu Gly Ser Arg Tyr Ser
              340   345   350

Thr Pro Ile Asp Ile Trp Ser Phe Arg Cys Ile Leu Ala Glu Leu Leu
              355   360   365

Thr Gly Gln Pro Leu Phe Pro Gly Glu Asp Glu Gly Asp Gln Leu Ala

                    370   375   380

    Cys Met Met Glu Leu Leu Gly Met Pro Pro Pro Lys Leu Leu Glu Gln
    385   390   395   400

    Ser Lys Arg Ala Lys Tyr Phe Ile Asn Ser Lys Gly Ile Pro Arg Tyr
                    405   410   415

    Cys Ser Val Thr Thr Gln Ala Asp Gly Arg Val Val Leu Val Gly Gly
                    420   425   430

    Arg Ser Arg Arg Gly Lys Lys Arg Gly Pro Pro Gly Ser Lys Asp Trp
                435   440   445

    Gly Thr Ala Leu Lys Gly Cys Asp Asp Tyr Leu Phe Ile Glu Phe Leu
            450   455   460

    Lys Arg Cys Leu His Trp Asp Pro Ser Ala Arg Leu Thr Pro Ala Gln
    465   470   475   480

    Ala Leu Arg His Pro Trp Ile Ser Lys Ser Val Pro Arg Pro Leu Thr
                    485   490   495

    Thr Ile Asp Lys Val Ser Gly Lys Arg Val Val Asn Pro Ala Ser Ala
                    500   505   510

    Phe Gln Gly Leu Gly Ser Lys Leu Pro Pro Val Val Gly Ile Ala Asn
                515   520   525

    Lys Leu Lys Ala Asn Leu Met Ser Glu Thr Asn Gly Ser Ile Pro Leu
            530   535   540

    Cys Ser Val Leu Pro Lys Leu Ile Ser
    545   550

    <210>   16
    <211>   520
    <212>   PRT
    <213>   Homo sapiens

    <400>   16

    Met Pro Ala Ser Glu Leu Lys Ala Ser Glu Ile Pro Phe His Pro Ser
    1   5   10   15

    Ile Lys Thr Gln Asp Pro Lys Ala Glu Glu Lys Ser Pro Lys Lys Gln
                    20   25   30

Lys Val Thr Leu Thr Ala Ala Glu Ala Leu Lys Leu Phe Lys Asn Gln
        35   40   45

Leu Ser Pro Tyr Glu Gln Ser Glu Ile Leu Gly Tyr Ala Glu Leu Trp
        50   55   60

Phe Leu Gly Leu Glu Ala Lys Lys Leu Asp Thr Ala Pro Glu Lys Phe
65   70   75   80

Ser Lys Thr Ser Phe Asp Asp Glu His Gly Phe Tyr Leu Lys Val Leu
                85   90   95

His Asp His Ile Ala Tyr Arg Tyr Glu Val Leu Glu Thr Ile Gly Lys
            100   105   110

Gly Ser Phe Gly Gln Val Ala Lys Cys Leu Asp His Lys Asn Asn Glu
            115   120   125

Leu Val Ala Leu Lys Ile Ile Arg Asn Lys Lys Arg Phe His Gln Gln
        130   135   140

Ala Leu Met Glu Leu Lys Ile Leu Glu Ala Leu Arg Lys Lys Asp Lys
145   150   155   160

Asp Asn Thr Tyr Asn Val Val His Met Lys Asp Phe Phe Tyr Phe Arg
                165   170   175

Asn His Phe Cys Ile Thr Phe Glu Leu Leu Gly Ile Asn Leu Tyr Glu
            180   185   190

Leu Met Lys Asn Asn Asn Phe Gln Gly Phe Ser Leu Ser Ile Val Arg
        195   200   205

Arg Phe Thr Leu Ser Val Leu Lys Cys Leu Gln Met Leu Ser Val Glu
    210   215   220

Lys Ile Ile His Cys Asp Leu Lys Pro Glu Asn Ile Val Leu Tyr Gln
225   230   235   240

Lys Gly Gln Ala Ser Val Lys Val Ile Asp Phe Gly Ser Ser Cys Tyr
                245   250   255

Glu His Gln Lys Val Tyr Thr Tyr Ile Gln Ser Arg Phe Tyr Arg Ser
            260   265   270

Pro Glu Val Ile Leu Gly His Pro Tyr Asp Val Ala Ile Asp Met Trp
    275   280   285

```
Ser Leu Gly Cys Ile Thr Ala Glu Leu Tyr Thr Gly Tyr Pro Leu Phe
    290                 295             300

Pro Gly Glu Asn Glu Val Glu Gln Leu Ala Cys Ile Met Glu Val Leu
305             310             315                 320

Gly Leu Pro Pro Ala Gly Phe Ile Gln Thr Ala Ser Arg Arg Gln Thr
            325             330                 335

Phe Phe Asp Ser Lys Gly Phe Pro Lys Asn Ile Thr Asn Asn Arg Gly
        340             345             350

Lys Lys Arg Tyr Pro Asp Ser Lys Asp Leu Thr Met Val Leu Lys Thr
        355             360             365

Tyr Asp Thr Ser Phe Leu Asp Phe Leu Arg Arg Cys Leu Val Trp Glu
    370             375             380

Pro Ser Leu Arg Met Thr Pro Asp Gln Ala Leu Lys His Ala Trp Ile
385             390             395                 400

His Gln Ser Arg Asn Leu Lys Pro Gln Pro Arg Pro Gln Thr Leu Arg
            405             410             415

Lys Ser Asn Ser Phe Phe Pro Ser Glu Thr Arg Lys Asp Lys Val Gln
            420             425             430

Gly Cys His His Ser Ser Arg Lys Ala Asp Glu Ile Thr Lys Glu Thr
        435             440             445

Thr Glu Lys Thr Lys Asp Ser Pro Thr Lys His Val Gln His Ser Gly
    450             455             460

Asp Gln Gln Asp Cys Leu Gln His Gly Ala Asp Thr Val Gln Leu Pro
465             470             475                 480

Gln Leu Val Asp Ala Pro Lys Lys Ser Glu Ala Ala Val Gly Ala Glu
            485             490             495

Val Ser Met Thr Ser Pro Gly Gln Ser Lys Asn Phe Ser Leu Lys Asn
            500             505             510

Thr Asn Val Leu Pro Pro Ile Val
        515             520
```

<210> 17
<211> 520
<212> PRT
<213> Homo sapiens

<400> 17

Met Pro Ala Ser Glu Leu Lys Ala Ser Glu Ile Pro Phe His Pro Ser
1   5   10   15

Ile Lys Thr Gln Asp Pro Lys Ala Glu Glu Lys Ser Pro Lys Lys Gln
            20   25   30

Lys Val Thr Leu Thr Ala Ala Glu Ala Leu Lys Leu Phe Lys Asn Gln
        35   40   45

Leu Ser Pro Tyr Glu Gln Ser Glu Ile Leu Gly Tyr Ala Glu Leu Trp
    50   55   60

Phe Leu Gly Leu Glu Ala Lys Lys Leu Asp Thr Ala Pro Glu Lys Phe
65   70   75   80

Ser Lys Thr Ser Phe Asp Asp Glu His Gly Phe Tyr Leu Lys Val Leu
                85   90   95

His Asp His Ile Ala Tyr Arg Tyr Glu Val Leu Glu Thr Ile Gly Lys
            100   105   110

Gly Ser Phe Gly Gln Val Ala Lys Cys Leu Asp His Lys Asn Asn Glu
        115   120   125

Leu Val Ala Leu Lys Ile Ile Arg Asn Lys Lys Arg Phe His Gln Gln
    130   135   140

Ala Leu Met Glu Leu Lys Ile Leu Glu Ala Leu Arg Lys Lys Asp Lys
145   150   155   160

Asp Asn Thr Tyr Asn Val Val His Met Lys Asp Phe Phe Tyr Phe Arg
                165   170   175

Asn His Phe Cys Ile Thr Phe Glu Leu Leu Gly Ile Asn Leu Tyr Glu
            180   185   190

Leu Met Lys Asn Asn Asn Phe Gln Gly Phe Ser Leu Ser Ile Val Arg
        195   200   205

Arg Phe Thr Leu Ser Val Leu Lys Cys Leu Gln Met Leu Ser Val Glu
    210   215   220

```
Lys Ile Ile His Cys Asp Leu Lys Pro Glu Asn Ile Val Leu Tyr Gln
225             230             235             240

Lys Gly Gln Ala Ser Val Lys Val Ile Asp Phe Gly Ser Ser Cys Tyr
            245             250             255

Glu His Gln Lys Val Tyr Thr Tyr Ile Gln Ser Arg Phe Tyr Arg Ser
            260             265             270

Pro Glu Val Ile Leu Gly His Pro Tyr Asp Val Ala Ile Asp Met Trp
            275             280             285

Ser Leu Gly Cys Ile Thr Ala Glu Leu Tyr Thr Gly Tyr Pro Leu Phe
            290             295             300

Pro Gly Glu Asn Glu Val Glu Gln Leu Ala Cys Ile Met Glu Val Leu
305             310             315             320

Gly Leu Pro Pro Ala Gly Phe Ile Gln Thr Ala Ser Arg Arg Gln Thr
            325             330             335

Phe Phe Asp Ser Lys Gly Phe Pro Lys Asn Ile Thr Asn Asn Arg Gly
            340             345             350

Lys Lys Arg Tyr Pro Asp Ser Lys Asp Leu Thr Met Val Leu Lys Thr
            355             360             365

Tyr Asp Thr Ser Phe Leu Asp Phe Leu Arg Arg Cys Leu Val Trp Glu
            370             375             380

Pro Ser Leu Arg Met Thr Pro Asp Gln Ala Leu Lys His Ala Trp Ile
385             390             395             400

His Gln Ser Arg Asn Leu Lys Pro Gln Pro Arg Pro Gln Thr Leu Arg
            405             410             415

Lys Ser Asn Ser Phe Phe Pro Ser Glu Thr Arg Lys Asp Lys Val Gln
            420             425             430

Gly Cys His His Ser Ser Arg Lys Ala Asp Glu Ile Thr Lys Glu Thr
            435             440             445

Thr Glu Lys Thr Lys Asp Ser Pro Thr Lys His Val Gln His Ser Gly
            450             455             460

Asp Gln Gln Asp Cys Leu Gln His Gly Ala Asp Thr Val Gln Leu Pro
```

465   470   475   480

Gln Leu Val Asp Ala Pro Lys Lys Ser Glu Ala Ala Val Gly Ala Glu
                485   490   495

Val Ser Met Thr Ser Pro Gly Gln Ser Lys Asn Phe Ser Leu Lys Asn
                500   505   510

Thr Asn Val Leu Pro Pro Ile Val
            515   520